

# A new subspecies of *Coptodera papuella* Darlington from New Britain

(Insecta, Coleoptera, Carabidae, Lebiinae)

Martin Baehr

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A new subspecies of the New Guinean lebiine species *Coptodera papuella* Darlington is described from New Britain: *C. papuella mitescens*, subsp. nov. The species *C. papuella* is related to the Australian-New Guinean *fasciolata-wau*-lineage that was formerly combined to a separate genus *Ectinochila* Chaudoir, but *C. papuella* is distinguished from both species by its very strangely shaped aedeagus that bears a very unusual, bicornute apex.

Dr. Martin Baehr, Zoologische Staatssammlung, Münchhausenstr. 21, D-81247 München, Germany; e-mail: martin.baehr@zsm.mwn.de

## Introduction

Through courtesy of Mr. A. Weigel (Pößneck) I received samples of carabid beetles from the Papuan region that, *inter alia*, included specimens of an hitherto unknown small coptoderine taxon from New Britain related to those species [*C. fasciolata* (Macleay), *C. papuella* Darlington, *C. wau* Darlington] that were formerly included in the separate genus *Ectinochila* Chaudoir. Comparison with all three species revealed that the new taxon is most closely related to *C. papuella* Darlington which is widespread in New Guinea but was not yet recorded from outside of this island. With respect to the high-grade similarity in external and sexual characters of both, the New Guinean *C. papuella* and the New Britain specimens, the latter are described as a subspecies of *C. papuella*, because the male genitalia of both taxa are unique and, at the same time, extremely similar.

## Genus *Coptodera* Dejean

This genus in its wider sense is distributed with numerous species worldwide throughout the tropics. In the Old World tropics it is represented by the subgenus *Coptoderina* Jeannel, and all Australian and

New Guinean species belong to this subgenus. But even in its restricted sense, the subgenus is diverse in its external morphology, and some small Australian and New Guinean species form a separate group, the species of which formerly were included in a separate genus *Ectinochila* Chaudoir. This group so far includes three species, the Australian *C. fasciolata* (Macleay), and *C. wau* Darlington and *C. papuella* Darlington, both from New Guinea, though the first two are more closely related *inter se*. All three species are characterized by small size, very coarse microreticulation of the surface, and their elytral pattern that consists of numerous light longitudinal spots that form a distinct pattern characteristic for each species.

## *Coptodera papuella* Darlington

Darlington, 1968: 115.

**Diagnosis.** Small species, distinguished from the related species *C. fasciolata* (Macleay) and *C. wau* Darlington by different pattern, but in particular by its unusually shaped, at apex bicornute aedeagus.

**Note.** The nominate subspecies is quite common and widely distributed throughout New Guinea.

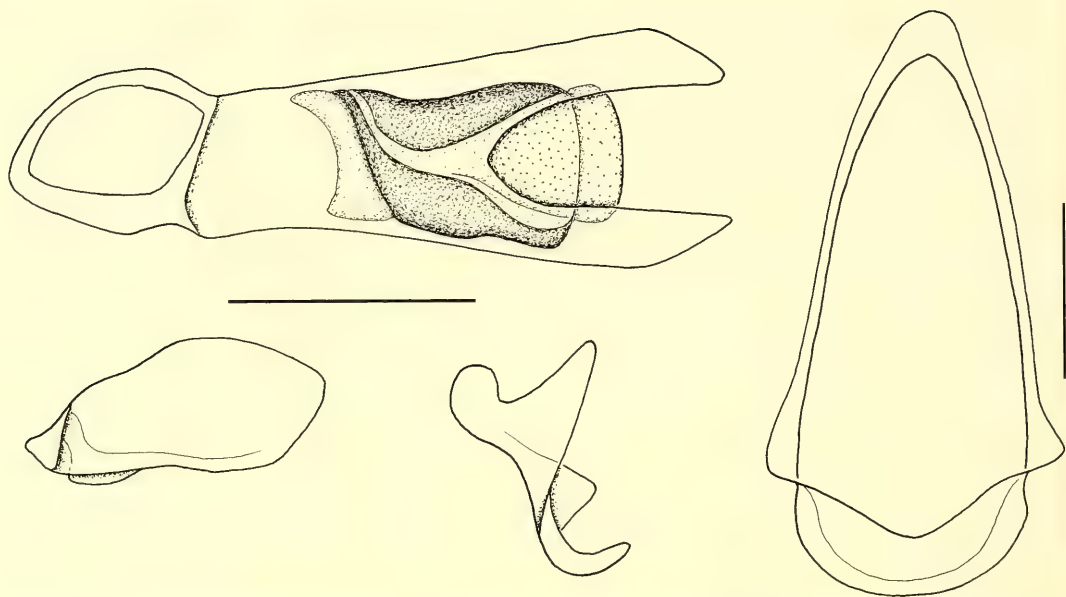


Fig. 1. *Coptodera papuella nitescens*, subsp. nov. Male genitalia: Aedeagus, ventral surface, parameres, genital ring. Scales: 0.25 mm.

*Coptodera papuella nitescens*, subsp. nov.

Figs 1, 2

**Types.** Holotype: #m, PMG: E New Britain Prov., 30 km SW Kokopo, 5 km SW Arabam, 04°35'75"S, 152°06'84"E, 25.II.2000, leg. A. Weigel Kl (ZSM-CBM). – Paratypes: 1♂, 2♀♀, same data (CBM, CWP).

**Diagnosis.** Subspecies distinguished from the nominate subspecies from New Guinea by far less distinctly microreticulate, considerably glossier surface of the elytra, and more extended light elytral pattern that differs in the uninterrupted yellow or whitish lines on 6<sup>th</sup> and 8<sup>th</sup> intervals.

**Description**

**Measurements.** Length: 3.6–4.0 mm; width: 1.7–1.85 mm. Ratios: width/length of pronotum: 1.67–1.69; width pronotum/head: 1.17–1.18; length/width of elytra: 1.26–1.28; width elytra/pronotum: 1.69–1.74.

**Colour** (Fig. 2). Colouration somewhat different from nominate subspecies and, at the same time, more contrasting. Head and pronotum greenish-blue, margins of labrum, upper rim of mandibles, palpi, antennae, lateral margins, and middle of apical and basal margins of pronotum yellow. Ground colour of elytra basically brown or blackish with greenish tinge, and with a pattern of numerous light yellow lines, but light pattern of elytra so much extended that the elytra appear rather light with a

subscutellar and an interrupted, narrow, w-shaped postmedian spot only left dark, and with dark apex. Lower surface blackish. Femora and middle of tibiae piceous, knees, apex of tibiae, and tarsi yellow.

**Head.** As in nominate subspecies, with characteristic, extremely coarse, isodiametric microreticulation. Greenish-blue colouration very distinct, more distinct than in almost all specimens I saw from New Guinea.

**Pronotum.** As in nominate subspecies, though greenish-blue colouration of disk remarkably distinct.

**Elytra.** Shape as in nominate subspecies. Microreticulation slightly transverse, much more superficial than in nominate subspecies, therefore surface remarkably glossy.

**Lower surface.** As in nominate subspecies.

**Legs.** As in nominate subspecies.

**♂ genitalia.** (Fig. 1). Much as in nominate subspecies. As Darlington (1968) did not figure the unique, very strangely shaped aedeagus of the nominate subspecies, a description and figure for the new subspecies is added that applies also to the nominate subspecies: Genital ring triangular, rather symmetric, with large apical plate. Aedeagus rather short and wide, dorso-ventrally depressed, in ventral view widened towards apex. Apex bicornute, with deep and symmetric excision, with large orificium. Internal sac rather simply folded, without any sclerotized pieces. Parameres very dissimilar, right

paramere small, short, at apex knobbed, left paramere very large, elongate.

Variation. Very little variation noted.

**Distribution.** Subspecies of a New Guinean species, known only from New Britain and from the type locality.

**Collecting circumstances.** Largely unknown, probably collected by sifting moss from fallen logs.

**Etymology.** The name refers to the remarkably glossier surface as compared with that of the nominate subspecies from New Guinea.

**Remarks.** According to Darlington (1968), the nominate subspecies is widely distributed in New Guinea. Apart from a few specimens from scattered localities in Irian Jaya, I saw a large series sampled by fogging and at light in the Baiteta area in southeastern Papua New Guinea.

The very unusually shaped aedeagus is not only unique within the genus *Coptodera*, but also within the whole family Carabidae. Even the most closely related species *Coptodera wau* Darlington from New Guinea and *C. fasciolata* (Macleay) from northern Australia possess 'normal' shaped aedeagi with unidentate apex. Evolution and function of the strangely shaped aedeagus of *C. papuella* therefore are still obscure.

The new record corroborates the close relations that exist between the carabid faunas of New Guinea and the Bismarck Archipelago, but, at the same time, once more demonstrates the differences between both areas that are expressed in several related but nevertheless slightly different taxa in New Britain and New Ireland (for examples see for example Baehr 1994, 1997, 1999, 2003a,b).

### Acknowledgements

My thanks are due to Mr. A. Weigel (Pöbneck) for kindly making available the specimens of the new subspecies alongside with important additional material, and to Mr. A. Drumont (Bruxelles) for the kind loan of a large amount of New Guinean carabid beetles including large series of *C. papuella* from a fogging program carried out in the Baiteta area in southeastern Papua New Guinea.



Fig. 2. *Coptodera papuella nitescens*, subspec. nov. Habitus. Body length: 3.6 mm.

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